

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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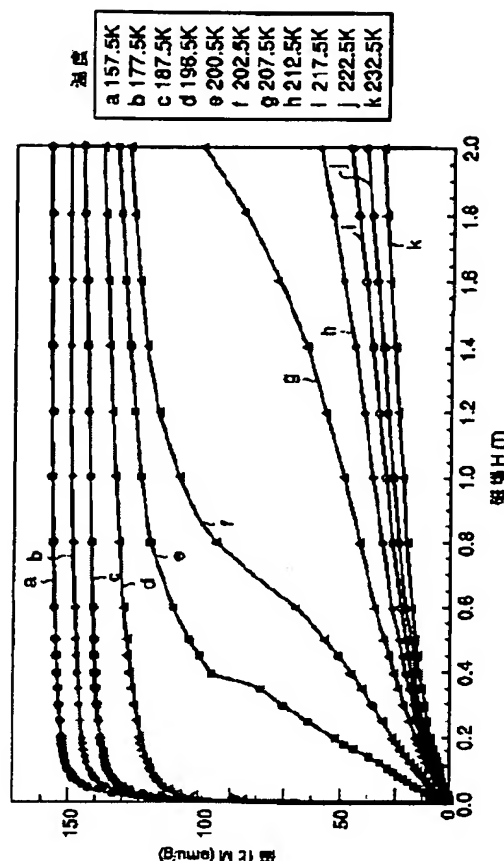
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TITLE : MAGNETIC MATERIAL



ABSTRACT : PROBLEM TO BE SOLVED: To provide a magnetic material capable of realizing magnetic freezing by using a relatively low magnetic field formed by a permanent magnet in a normal temperature range.

SOLUTION: This magnetic material has a point of inflection at which the second differential coefficient to the magnetic field of a magnetization curve is changed from positive to negative in a part of the temperature range, preferably, a part of the range of the magnetic field  $\geq 200$  K to  $\leq 350$  K. In this magnetic material, low temperature can be realized by using the relatively low magnetic field by taking-in/taking out the entropy between the electro-magnetic spin system and the lattice system in the vicinity of the temperature at which the point of inflection appears on the magnetization curve. The magnetic material satisfying the above conditions includes  $\text{La}(\text{Fe}, \text{Si})_{13}$ ,  $(\text{Hf}, \text{Ta})\text{Fe}_2$ ,  $(\text{Ti}, \text{Sc})\text{Fe}_2$ , and  $(\text{Nb}, \text{Mo})\text{Fe}_2$  containing 50-60 atm.% transition metals such as Fe.

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